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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/988,376	11/19/2001	Byron Scott Derringer	54080-00601	8359
22852	7590	05/04/2005	EXAMINER	
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER LLP 901 NEW YORK AVENUE, NW WASHINGTON, DC 20001-4413			TWEEL JR, JOHN ALEXANDER	
			ART UNIT	PAPER NUMBER
			2636	

DATE MAILED: 05/04/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/988,376

Applicant(s)

DERRINGER, BYRON SCOTT

Examiner

John A. Tweel, Jr.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 44-55 and 83-107 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 44-55 and 83-107 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

1. This Office action is in response to the amendment filed 12/20/04. Claims 44-47, 49, and 51-55 have been amended. Claims 56-82 have been canceled. Claims 83-107 have been added.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 44-47, 49, 51, 52, 83-86, 88, 90, and 91 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne** and **Jain** [U.S. 5,629,691].

For claim 44, the apparatus for detecting objects taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed transmitter is met by the directional beam transmitter (No. 100), 2) the claimed receiver is met by the receiver (No. 125), 3) the claimed processor is met by the central computer (No. 200), and 4) the claimed user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain and alarm signals, wherein the transmitter emits a first beam of light, the receiver indicates a first indication if the beam of light is interrupted, the processor sending a second indication to the user interface that produces a warning indication, whereby the user interface presents a third indication in response to the second indication sent by the processor. The optical system taught by **Mehnert** does not contain at least one transmitter located at a first location and at least one receiver located at a second location corresponding to the transmitter.

To locate a receiver and transmitter in two locations is not new in the prior art. The electronic perimeter warning system taught by Byrne includes a transmitter (No. 3) located at a first location and a corresponding receiver (No. 5) located in a second location. This reference is plain evidence that locating the transmitter and receiver in two different locations has been done for quite some time and is notoriously well known in the art of optical transceiving. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include two different locations for the transmitter and receiver for the purpose of taking advantage of a well-known and common optical configuration.

Also, there is no mention of using the system on an airport runway. The system of **Jain** teaches a runway incursion monitoring and warning system that monitors a runway and displays data indicative of unauthorized intrusion onto a runway to an operator. This reference presents an ideal setting onto which a system such as Mehnert and Byrne may be applied. The beam of light may easily substitute the radar units (No. 13) found in the Jain reference in order to detect intrusion onto the runway. People wandering onto a runway can be positively identified and alerted using the system of Byrne.

As Jain presents an ideal platform onto which a system such as Mehnert may be applied, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system of combined references above for use in a runway situation as these systems positively identify objects that are in a predetermined area. Such a system is ideal for an airport runway.

For claim 45, the claimed reflectors are met by the retro-reflectors (Nos. 501, 508, 509, and 510) of **Mehnert** and the reflector reflects light from the transmitter to the receiver.

For claim 46, the transmitter and receiver of **Mehnert** form a transceiving unit.

For claim 47, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 49, the system of **Mehnert** includes a support mechanism for the optical system.

For claim 51, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 52, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 83, the apparatus for detecting objects taught by **Mehnert** includes the following claimed subject matter, as noted, 1) the claimed transmitter is met by the directional beam transmitter (No. 100), 2) the claimed receiver is met by the receiver (No. 125), 3) the claimed processor is met by the central computer (No. 200), and 4) the claimed user interface is met by the output unit (No. 407) that depicts condition reports regarding the monitored terrain and alarm signals, wherein the transmitter emits a first beam of light, the receiver indicates a first indication if the beam of light is interrupted, the processor sending a second indication to the user interface that produces a warning indication, whereby the user interface presents a third indication in response to the second indication sent by the processor. The optical system taught by **Mehnert** does

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not contain at least one transmitter located at a first location and at least one receiver located at a second location corresponding to the transmitter.

The claim is interpreted for the same reasons and rationale as is mentioned in the rejection of claim 43 above.

For claim 84, the claimed reflectors are met by the retro-reflectors (Nos. 501, 508, 509, and 510) of **Mehnert** and the reflector reflects light from the transmitter to the receiver.

For claim 85, the transmitter and receiver of **Mehnert** form a transceiving unit.

For claim 86, Figure 4 of **Mehnert** depicts a support mechanism for the optical system.

For claim 88, the system of **Mehnert** includes a support mechanism for the optical system.

For claim 90, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

For claim 91, Figure 5 of the **Mehnert** reference depicts a cover over the optical transceiving unit.

4. Claims 48, 50, 87, and 89 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne** and **Jain** as applied to claim 44 above,

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For claim 48, the combination of references above includes the claimed subject matter as discussed in the rejection of claim 44 above. However, there is no mention of presenting the support mechanism as a flush surface.

The airport runway light support apparatus taught by **Reinert, Sr.** includes a lighting mechanism that is embedded in the ground as seen in Figure 11. The obvious advantage of this configuration is to prevent the support mechanism from being exposed to the elements, thereby elongating the operable life of the system. As the primary reference pertain to optical mounting transceivers, it would have been obvious to one of ordinary skill in the art at the time the invention was made to support the receiver in a substantially flush surface for the purpose of elongating the life of the system by preventing exposure to the elements.

For claim 50, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 48 above.

For claims 87 and 89, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claims 48 and 50 above.

5. Claims 53, 54, 92, and 93 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne** and **Jain** as applied to claim 44 above, and further in view of **O'Meara**.

For claims 53 and 54, the combination of references includes the claimed subject

The laser lighting system taught by **O'Meara** includes an optical system that assists in locating markers for navigation. One embodiment shown in Figure 28 includes a heated glass cover for clearing frost and ice from the surface of the optical system so that operation of the optical system is not impaired.

The O'Meara reference is plain evidence that optical systems have used heating to clear the optical channels for proper operation. The primary reference is to be used outdoors where such weather conditions may be experienced. It would have been obvious to one of ordinary skill in the art at the time the invention was made to include heating means in the optical system of Mehnert for the purpose of insuring proper operation in inclement weather.

For claims 92 and 93, the claims are interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claims 53 and 54 above.

6. Claims 55 and 94 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Mehnert** in view of **Byrne** and **Jain** as applied to claim 44 above, and further in view of **Bass** [U.S. 5,375,058].

For claim 55, the combination of references above includes the claimed subject matter as discussed in the rejections above. However, although there are multiple detectors in the system of Byrne, there is no mention of triangulation to locate an object on a runway.

The surface detection system of **Bass** uses triangulation from at least one scanner to detect the position of an airplane on a runway. This reference is plain

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evidence that triangulation has been used for some time on runways and to detect objects thereon. It would have been obvious to one of ordinary skill in the art at the time the invention was made to use triangulation in the combination of references above for the purpose of using such as well-known and common computation configuration.

For claim 94, the claim is interpreted and rejected for the same reasons and rationale as is mentioned in the rejection of claim 55 above.

7. Claims 95-107 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for detecting objects using a transmitter and receiver on a runway, does not reasonably provide enablement for informing the user of a type of object located on a runway. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

As stated in a prior Office action, the vast majority of the specification details the location of transmitters and receivers in relation to an airport runway. Nowhere is there any mention of exactly how the system determines the type of object on the runway. There is a lot of well meaning description in the Summary of how the system can determine and differentiate between debris and "other objects". The closest the specification comes is whether the object is moving or stationary, and even then the detailed description is not forthcoming in exactly how that is done. Can it differentiate between vehicles and animals? Garbage or humans? And if so, how? It is understood

that the transmitters and receivers can detect the presence or absence of an object, but the Examiner is still confused as to how this "item characterizer" is supposed to work.

### ***Response to Arguments***

#### ***Argument 1:***

"Mehnert, by contrast, is directed to an apparatus for monitoring surfaces... Mehnert fails to disclose any teaching of at least a 'plurality of transmitters' and 'a plurality of receivers', nor does it teach if 'incident beams are interrupted' as recited in claim 44. At most, Mehnert describes how the pattern of reflected changes is compared with stored data containing size, shape, configuration, etc. of objects to recognize the measured objects and to classify them."

#### ***Argument 2:***

"Jain is directed to an airport runway incursion warning system and consists of radar sensor units that generate radar beams to provide coverage of an airport runway. (Abstract). Jain fails to disclose any teaching of at least 'plurality of transmitters adapted to emit incident beams... a plurality of receivers adapted to receive said incident beams... wherein each of said plurality of transmitters are adapted to emit said incident beams across at least a portion of said runway, and each of said plurality of receivers being configured to receive one of said incident beams, wherein said plurality of receivers are adapted to indicate a first indication... if any of said incident beams are interrupted by an object on or over said runway' as recited in claim 44."

**Argument 3:**

"Byrne is directed to an electronic perimeter warning system to warn workers when the workers or the machinery the workers are operating crosses over the perimeter line established between a transmitter and receiver... The system provides a 'perimeter warning "line" around the edge of a work area' and when the 'continuity of the signal is broken by the passage of a person or machinery between the signal transmitting means and signal receiving means,' an alarm is activated."

**Argument 4:**

"Mehnert and Jain cannot be combined due to inconsistencies in the references. Jain mentions in the background the ASDE-3 radar system for airport surface monitoring, which is 'relatively expensive' and the need to provide for 'an improved radar system that may be use to monitor surface and runway incursion...which improves upon the currently-used ASDE-3 radar system.' Jain therefore uses 'low cost radars,' and the system described in Jain is 'considerably less expensive' than the ASDE-3 radar system described in the background... Replacing the radar system of Jain with the lasers of Mehnert however, would increase cost, and is inconsistent with the objectives of the Jain system."

**Argument 5:**

"Mehnert and Byrne also cannot be combined due to inconsistencies in the references. Mehnert explicitly states that 'the equipment...is not erected at the periphery or outer contour of the surface, region, space or area to be monitored, in other words, a supervised space, rather is arranged practically at the center or at least within the monitored region.' By contrast, Byrne is a 'perimeter warning system...for establishing a perimeter warning line around a selected area, such as along apportion of a building roof surface.'... Therefore, Byrne and Mehnert teach away from the combination since Byrne is used for perimeter detection and Mehnert is used to monitor a specified inner region."

**Argument 6:**

Furthermore, one skilled in the art would only arrive at the present claimed invention by consulting Applicant's disclosure, yet '[t]he teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure.'... However, Applicant submits that the Examiner has relied on Applicant's own disclosure in an attempt to provide some teaching or suggestion to combine Mehnert, Jain, and Byrne. Such reliance, however, constitutes improper hindsight reasoning...Applicant also notes that one of ordinary skill in the art must have this motivation or reason *without the benefit of Applicant's specification* to modify the references."

**Argument 7:**

Moreover, the Examiner alleges that '[i]t would have been obvious to one of ordinary skill in the art at the time of the [sic] invention was made to include two different locations for the transmitter and receiver for the purpose of taking advantage of a well-known and common optical configuration' and 'it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the system of combined references above for use in a runway situation as these systems positively identify objects that are in a predetermined area.' Applicant disagrees with the Examiner's allegations and conclusions as an unsubstantiated statement of questionable relevance to Applicant's claimed invention. Applicant further refers the Examiner to the February 21, 2002 Memorandum from USPTO Deputy Commissioner for Patent Examination Policy, Stephen G. Kunin, regarding "Procedures for Relying on Facts Which are Not of Record as Common Knowledge or for Taking Official Notice.' In relevant part, the Memorandum states, 'If the examiner is relying on personal knowledge to support the finding of what is known in the art, the examiner must provide an affidavit or declaration setting forth specific factual statements and explanation to support the finding'... Further, the Memorandum indicates that the Federal Circuit has 'criticized the USPTO's reliance on "basic knowledge" or "common sense" to support an obviousness rejection, where there was no evidentiary support in the record for such a finding.'...

Should the Examiner maintain the rejection after considering the arguments presented herein, Applicant submits that the Examiner must provide 'the explicit basis on which the examiner regards the matter as subject to official notice and [allow

Applicants] to challenge the assertion in the next reply after the Office action in which the common knowledge statement was made', or else withdraw the rejection."

**Argument 8:**

"In addition, regarding the required reasonable expectation of success, as evidenced from previous arguments regarding Mehnert, Jain, and Byrne. Applicant [sic] submits that there would be no reasonable expectation of success to be derived from modifying Mehnert, with Jain, and Byrne, as this would diverge at least from the elements of Applicant's independent claim 44, as noted above. This also demonstrates that the Examiner's reliance on Mehnert, Jain, and Byrne is not sufficient to establish *prima facie* obviousness."

8. Applicant's arguments filed 9/21/04 have been fully considered but they are not persuasive.

**Response to Arguments 1, 2, and 3:**

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

***Response to Arguments 4 and 5:***

In response to applicant's argument that the three references cannot be combined due to the inconsistencies in the references, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

Furthermore, NOWHERE in the prosecution of this case has the Applicant shown ANY evidence that laser systems would increase cost over a radar system. Absent this explicit basis of financial savings, the above rejections stand.

***Response to Argument 6:***

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

***Response to Argument 7:***

The Examiner thanks the Applicant's representative for citing USPTO Memoranda that he has read and heard about for the last three years. However, it appears that the Applicant's reference to citing common knowledge and official notice is misguided at best. The memo the Applicant refers to was meant to protect applicants from Examiners' blanket statements of common knowledge and official notice WITHOUT ANY SUPPORTING DOCUMENTATION WHATSOEVER. If the Examiner had merely mentioned that the optical configuration shown above was common and well-known without ANY reference to such a configuration, THEN the Applicant's argument would have merit. As it is, the Examiner is NOT relying on personal knowledge to support the finding of what is known in the art, but the references correctly cited above in the search that he performed. This is, therefore, the explicit basis on which he regards the matter that the Applicant so richly deserves.

***Response to Argument 8:***

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically pointing out how the language of the claims patentably distinguishes them from the references.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

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§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Pascale** [U.S. 5,198,799] comprises two posts with radiation transmitters and receivers.

**Bethke et al** [U.S. 5,448,243] provides a radar network for locating objects and obstructions in a runway.

**Smithey** [U.S. 6,486,825] monitors ground traffic in the vicinity of a runway and provides verbal warnings to the aircraft.

**Woodell** [U.S. 6,850,185] teaches an airborne radar system for detecting runway obstacles.

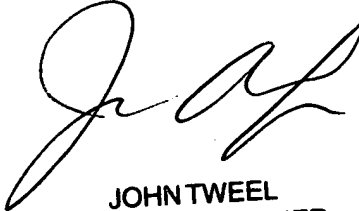
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11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John A. Tweel, Jr. whose telephone number is 571 272 2969. The examiner can normally be reached on M-F 10-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeff Hofsass can be reached on 571 272 2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JAT  
5/1/05



JOHN TWEEL  
PRIMARY EXAMINER